

Work Order ID 150127

Wednesday, August 24, 2016 11:37:00 AM

150127

Page 1

Item ID: 646.9710

Revision ID:

Item Name: Body

Start Date: 8/2/2016 Start Qty: 10.00

Required Date: 8/26/2016 Req'd Qty: 10.00

Reference:

Accept

N900040100

Setup Start ***NS1***

Stop ***NS2***

Cust Item ID:

Customer:

Approvals:

Process Plan:

DAS

21

Date: **AUG 24 2016**

Tooling:

Date:

QC:

9-89

Date:

SPC (Y/N):

Date:

Run Start ***NR1***

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
646.9700	D2								

100

100

Bandsaw

Jeaspa Bandsaw

BAND SAW

Memo

Cut Blank at 7.425"

0.00

0.14

10

10

DAS

14

9-89

16/10/16

110

110

HAAS 1

HAAS CNC vertical machine #1

HAAS CNC VERTICAL MACHINING #1

Memo

1-Machine per folio FB130

DWG REV: **0**

FOLIO REV: **14**

0.09

1.00

10

10

DAS

33

9-89

16/10/17

2- deburr and break all sharp edges

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐				
Date :	Step #:	QTY Effective :			MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐				
		OTHER : ☐				

Work Order ID 150127***150127***

Page 2

Wednesday, August 24, 2016 11:37:00 AM

Item ID: 646.9710 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Body
Start Date: 8/2/2016 Start Qty: 10.00 ***10*** Cust Item ID:
Required Date: 8/26/2016 Req'd Qty: 10.00 ***10*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC2- Inspect parts off machine FAI/FAIB Memo	0.00 0.02				10	φ		DAS JL 33 16-10-18 9-89 16/10/17
130 *130* QC Quality Control	QC8- Inspect parts - second check Memo	0.00 0.03		B. = 16/10/19		10	φ		DAS 08 9-89
140 *140* Outsource4 Outsource process - Anodize	Outsource process-Anodize per QSI017 4.1.10.1 Memo Issue P/O to ATG : 34063 1- Black Anodize as per Dwg 646.9700 2- PRIME AS PER DWG, SEE NOTE #2 Certification of Conformity is required	0.00 299.99				10		OCT 26 2016	DAS 13 9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Work Order ID 150127

Wednesday, August 24, 2016 11:37:00 AM

150127

Page 3

Item ID: 646.9710 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Body
Start Date: 8/2/2016 Start Qty: 10.00 ***10*** Cust Item ID:
Required Date: 8/26/2016 Req'd Qty: 10.00 ***10*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Receive & Inspect for Damage & Mat'l Certs	0.00							
150									
Packaging	Memo	0.03				10x		NOV 11 2016	DAS 26 9-89
Packaging									
155	QC5- Inspect part completeness to step on W/O	0.00							
155									
QC	Memo	0.03				10			DAS 38 9-89
Quality Control								NOV 11 2016	
180	Identify as per dwg & Stock Location: <u>ccx012</u>	0.00							
180									
Packaging	Memo	0.02				10x		NOV 14 2016	DAS 26 9-89
Packaging	***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***								

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																						
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Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																		
Description Work Order Deviation				Disposition																					
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Root Cause		FAULT CATEGORY																							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : ☐																			

Work Order ID 150127

Wednesday, August 24, 2016 11:37:00 AM

150127

Page 4

Item ID: 646.9710

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Body

Stop ***NS2***

Start Date: 8/2/2016 Start Qty: 10.00

10

Cust Item ID:

Required Date: 8/26/2016 Req'd Qty: 10.00

10

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190

QC21- Final Inspection - Work Order Release

0.00

190

QC

Memo

0.17

Quality Control

16/11/15 

16-11-15 

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">Skid-tube ☐</td> <td style="width: 15%;">Cross tube ☐</td> <td style="width: 15%;">Water Jet ☐</td> <td style="width: 15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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OTHER : ☐																					

Picklist Print

Wednesday, August 24, 2016 11:37:03 AM

Page 1

Work Order ID: 150127

150127

Parent Item: 646.9710

646 9710

Parent Item Name: Body

Start Date: 8/2/2016

Required Date: 8/26/2016

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP REV:A NEW ISSUE 12/10/04 JFS VERIFY BY: DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M7075T6B5.000X1.000		Purchased	No			100	f	22.9800	0.62	6.526316			

M7075T6B5 000X1 000

7075-T6 BAR 5.000" X 1.000"

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
MAT005	22.98	
M135003	2.98	
M135248	8	
M135318	12	

6.2
DAS
14
9-00
amf
16/10/16

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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DART AEROSPACE LTD		Work Order:	150127
Description: Body		Part Number:	646.9710
Inspection Dwg: 646.9700 Rev: D2		Page 1 of 2	

INSPECTION SHEET

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.13 x 45°	+/-0.010 x 0.5°	0.140 x 45°	✓		MIP-04	vern
1.500	+/-0.005	1.500	✓			
0.352	+0.005/-0.000	0.355	✓			
0.10 x 45°	+/-0.010 x 0.5°	0.100 x 45°	✓			
0.875	+/-0.005	0.874	✓			
0.700	+/-0.005	0.703	✓			
5.500	+/-0.005	5.500	✓			
0.660	+/-0.005	0.657	✓		31026	Height gauge
0.660	+/-0.005	0.657	✓			
0.278	+/-0.002	0.277	✓			
0.339	+/-0.002	0.337	✓			
0.352	+/-0.002	0.350	✓			
0.372	+/-0.002	0.370	✓			
1.067	+/-0.002	1.065	✓			
2.608	+/-0.002	2.606	✓			
2.750	+/-0.002	2.742	✓			
2.892	+/-0.002	2.890	✓			
3.348	+/-0.002	3.346	✓			
3.597	+/-0.002	3.595	✓			
3.847	+/-0.002	3.845	✓			
0.351	+/-0.002	0.351	✓			
0.544	+/-0.002	0.544	✓			
2.195	+/-0.002	2.195	✓			
2.304	+/-0.002	2.304	✓			
2.451	+/-0.002	2.451	✓			
2.639	+/-0.002	2.639	✓			
3.395	+/-0.002	3.395	✓			
3.495	+/-0.002	3.495	✓			
4.551	+/-0.002	4.551	✓			
4.595	+/-0.002	4.595	✓			
4.687	+/-0.002	4.697	✓			
4.734	+/-0.002	4.734	✓			
6.651	+/-0.002	6.651	✓			
Ø0.201	+0.005/-0.001	0.201	✓			

DART AEROSPACE LTD		Work Order:	150127
Description: Body		Part Number:	646.9710
Inspection Dwg: 646.9700 Rev: D2		Page 2 of 2	

INSPECTION SHEET

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.177	+0.005/-0.001	0.177	✓		MJP-04	vern
7.026	+/-0.005	7.026	✓		31006	Height gauge
4.245	+/-0.005	4.244	✓		...	...
0.487	+/-0.005					
0.409	+/-0.005					

Measured by:	33 9-89	Checked by:	DAS	QC Inspector:	
Date:	16/10/17	Date:	16/10/19	Date:	

Engineering Approval: (If necessary)		Date:	
--	--	--------------	--

Rev	Date	Change	Revised by	Approved
A	13.06.03	New Issue	KJ	
B	13.07.18	Dwg Rev updated	KJ	
C	14.01.21	Dwg Rev updated	KJ	
D	16.05.27	Dimensions updated per Dwg Rev D2	KJ	



APICAL INDUSTRIES, INC.
dba DART AEROSPACE

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

ENGINEERING CHANGE NOTICE NO.

05360

SHEET 1 OF 1

DWG NO. 646.9700

REV: D

PREPARED BY J. BECKER

DATE: 03/24/16

EFFECT ON DWG
☐ INC. ☒ UNINC.

DWG TITLE: CUTTER SUB ASSY

APPROVED BY: ENGR *[Signature]*

MFG *[Signature]*

QC *[Signature]*

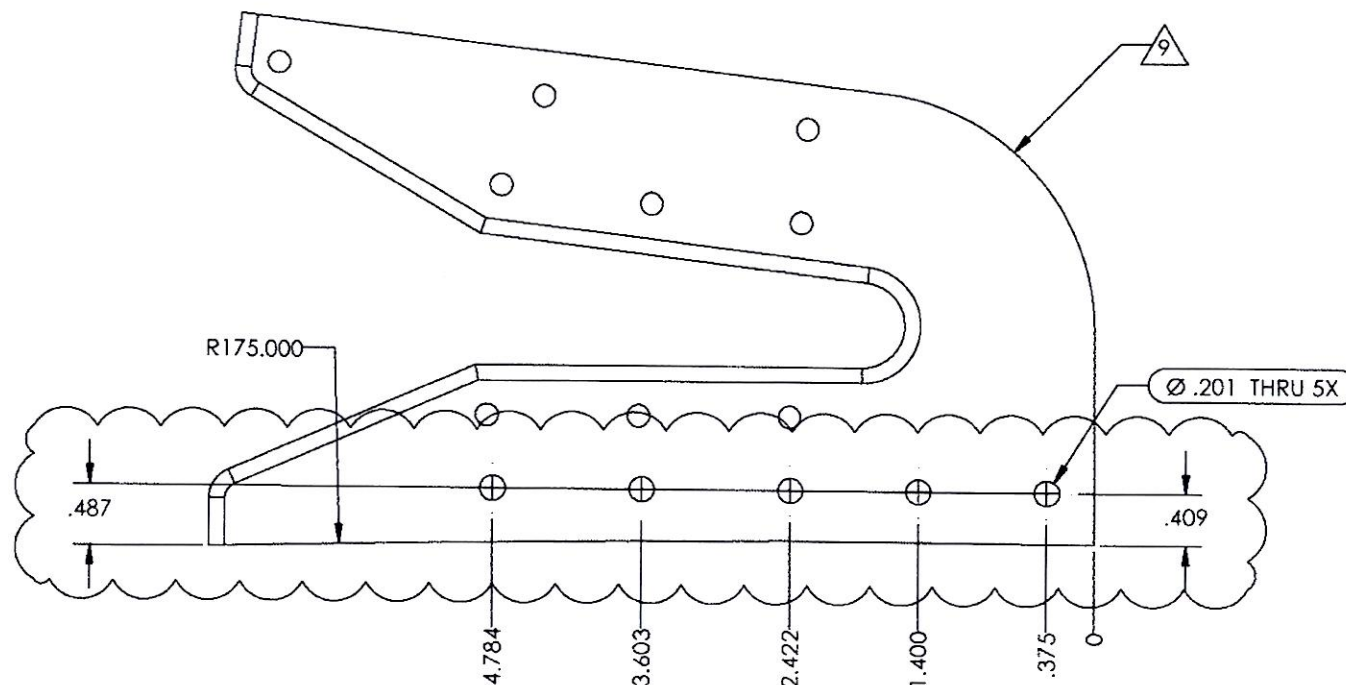
EFF. CURRENT ORDER

REASON: REVISED DIMENSIONS

ECR: N/A

ACTION ITEM:
1.

SHEET 7, ZONE C3 IS:



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 150127 MJS
160824

DOCUMENTS EFFECTED:

☐ PATTERN ☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM

CHANGE CATEGORY

☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED

☐ YES ☒ NO



APICAL INDUSTRIES, INC.
dba DART AEROSPACE

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

ENGINEERING CHANGE NOTICE NO.

05345

SHEET 1 OF 1

DWG NO. 646.9700

REV: D

PREPARED
BY

J. GARDINER

DATE: 03/15/16

EFFECT ON DWG

☐ INC. ☒ UNINC.

DWG TITLE: CUTTER SUB ASSY

APPROVED BY:

ENGR

MFG

QC

EFF.

CURRENT ORDER

REASON: REVISED NOTES

ECR:

N/A

ACTION ITEM:

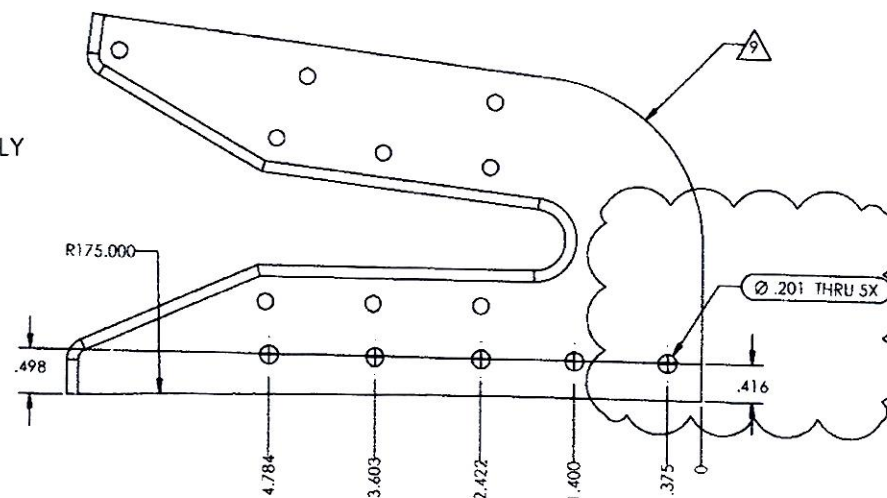
1.

SHEET 1, ZONE A6 IS:

NOTES:

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH IAW MPP-172 SECTION 2.1, 3.3 & 4.3.
- 3 MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
- 4 FINISH: PRIME IAW MPP-172 SECTION 3.3; 1-2 MIL MAX
5. DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
6. IDENTIFY IAW MPP-120
- 7 APPLY F/N 5 AS REQUIRED TO ALL FAYING SURFACES OF F/N 2 UPON ASSEMBLY
- 8 CUTTING EDGE INTENDED TO BE SHARP, DO NOT BREAK SHARP EDGE
- 9 ALL DIMENSIONS NOT SPECIFIED ARE CONTROLLED BY 646.9710.

SHEET 7, ZONE C5 IS:



DOCUMENTS EFFECTED:

☐ PATTERN ☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM

CHANGE CATEGORY

☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED

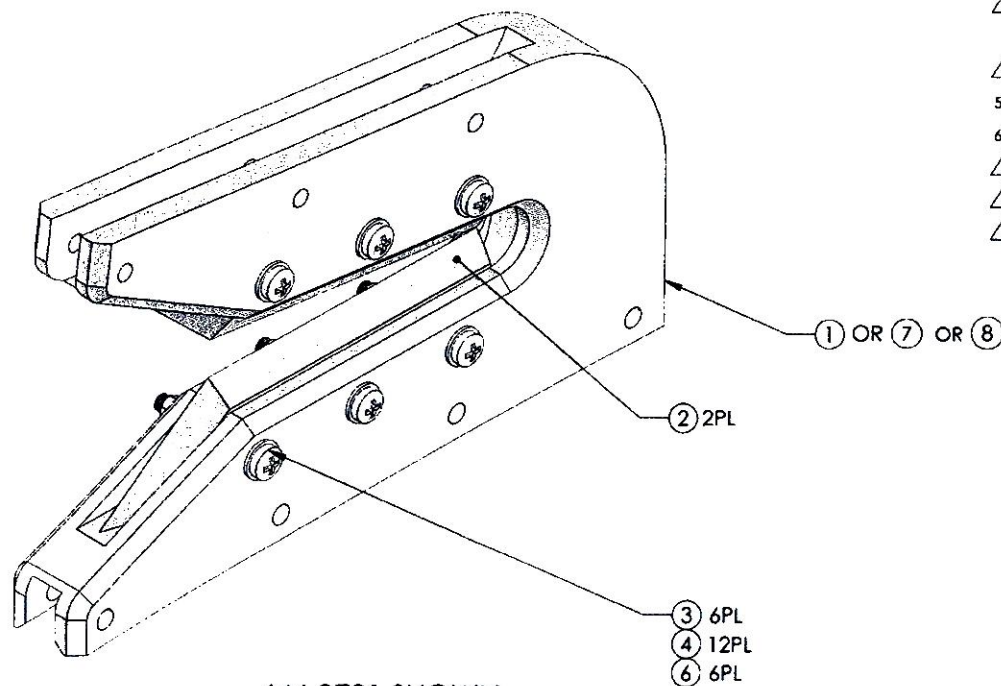
☐ YES ☒ NO

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED BY
1	LAST PROTOTYPE REVISION - P32		
2	FINAL RELEASE	03/29/06	P. BEAVO
A	INCORPORATED ECN 02744 03030 23P12	06/06/13	P. BEAVO
B	INCORPORATED ECN 03067	07/03/13	P. BEAVO
C	INCORPORATED ECN 04039	08/09/13	P. BEAVO
D	INCORPORATED ECN 05329	07/26/14	P. BEAVO

NOTES:

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH IAW MPP-172 SECTION 3.3 & 4.3.
- 3 MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
- 4 FINISH: PRIME IAW MPP-172 SECTION 3.3: 1-2 MIL MAX
- 5 DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
- 6 IDENTIFY IAW MPP-120
- 7 APPLY F/N 5 AS REQUIRED TO ALL FAYING SURFACES OF F/N 2 UPON ASSEMBLY
- 8 CUTTING EDGE INTENDED TO BE SHARP. DO NOT BREAK SHARP EDGE
- 9 ALL DIMENSIONS NOT SPECIFIED ARE CONTROLLED BY 646.9710.



646.9701 SHOWN
646.9702 & 646.9703 TYP

UNINCORPORATED ECN(S)

05345, 05360,

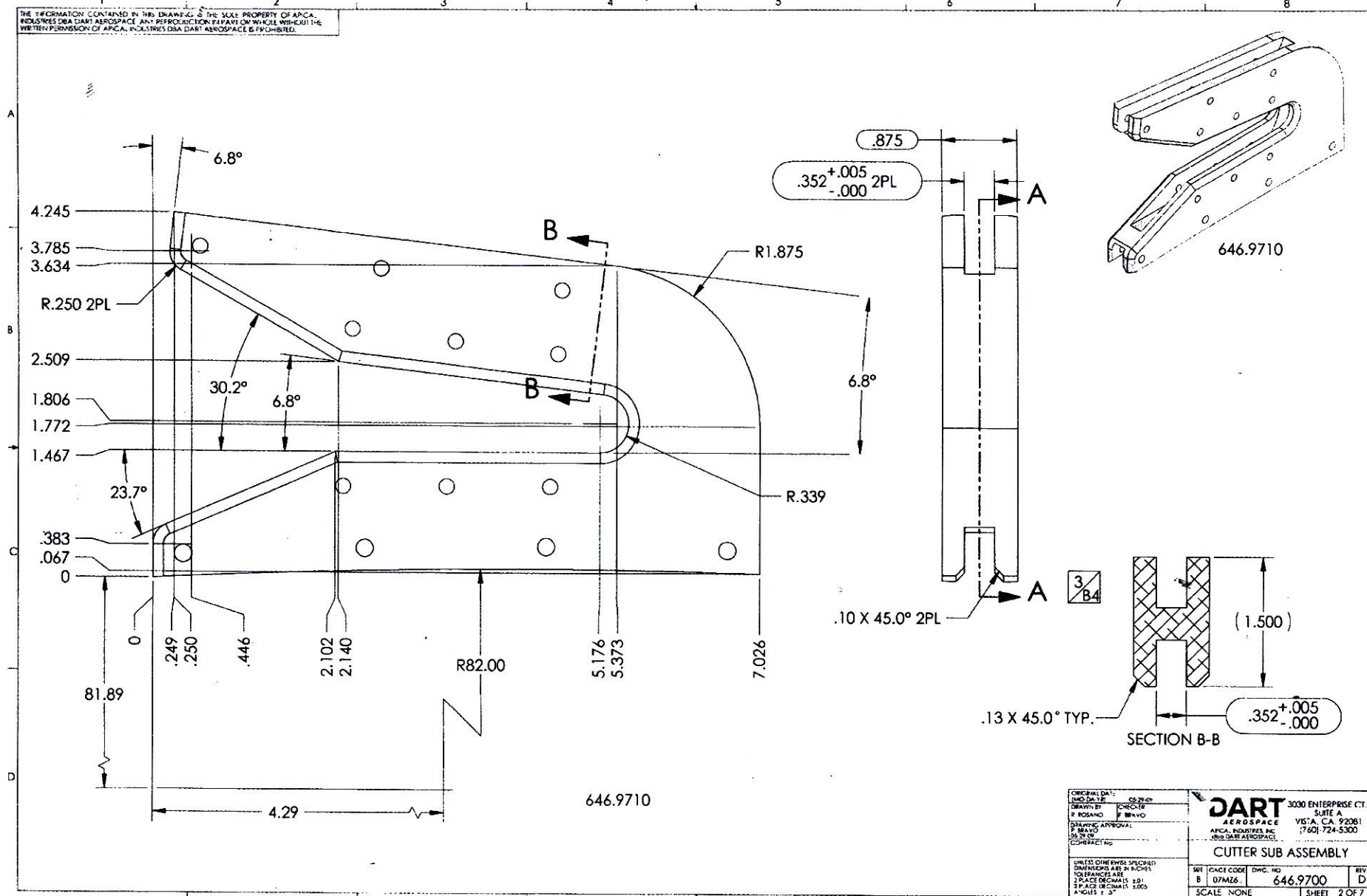
1			8	646.9713	BODY			
	1		7	646.9712	BODY			
6	6	6	6	601.1541	LOCKNUT			
A/R	A/R	A/R	5	601.2045	RTV LOCTITE 598			
12	12	12	4	601.2764	WASHER			
6	6	6	3	601.2765	SCREW			
2	2	2	2	646.9711	BLADE			
			1	646.9710	BODY			
X				646.9703	CUTTER SUB ASSY			
	X			646.9702	CUTTER SUB ASSY			
		X		646.9701	CUTTER SUB ASSY			
QTY	REV	REV	REV	FIND #	PART #	DESCRIPTION	MATL	SPEC.
PARTS LIST								
NEXT ASSY (S)				ORIGINAL DATE 05-29-06				
646.9600				DRAWN BY: J. ROSENO				
				CHECKED BY: P. BEAVO				
				DESIGNED BY: P. BEAVO				
				CONTRACT NO.				
				UNLESS OTHERWISE SPECIFIED				
				DIMENSIONS ARE IN INCHES				
				TOLERANCES ARE:				
				FRACTIONS: AS SHOWN				
				DECIMALS: .001				
				ANGLES: .5°				
				SCALE: NONE				
				SHEET 1 OF 7				

DART 3030 ENTERPRISE CT.
AEROSPACE SUITE A
APICAL INDUSTRIES INC. VISTA, CA 92081
760-724-5300
200 DART AEROSPACE CT.

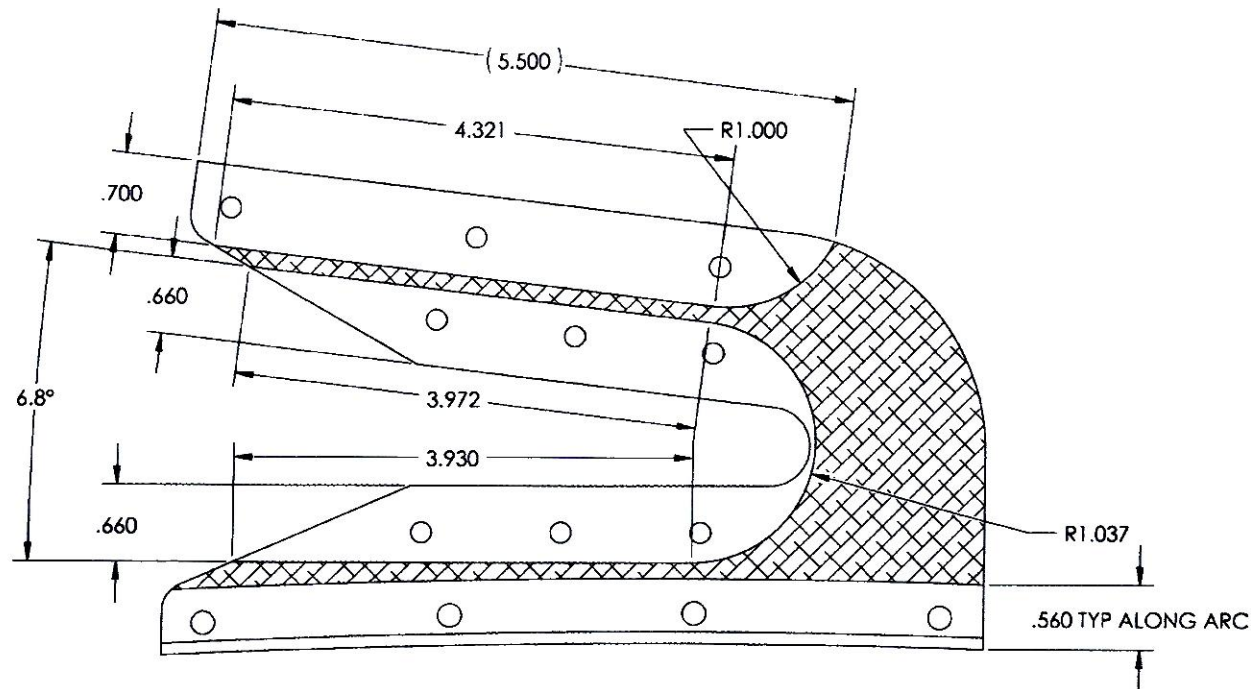
CUTTER SUB ASSEMBLY

1/8" (LARGE DIM) DWG NO. 646.9700
B 07M26
SCALE: NONE SHEET 1 OF 7

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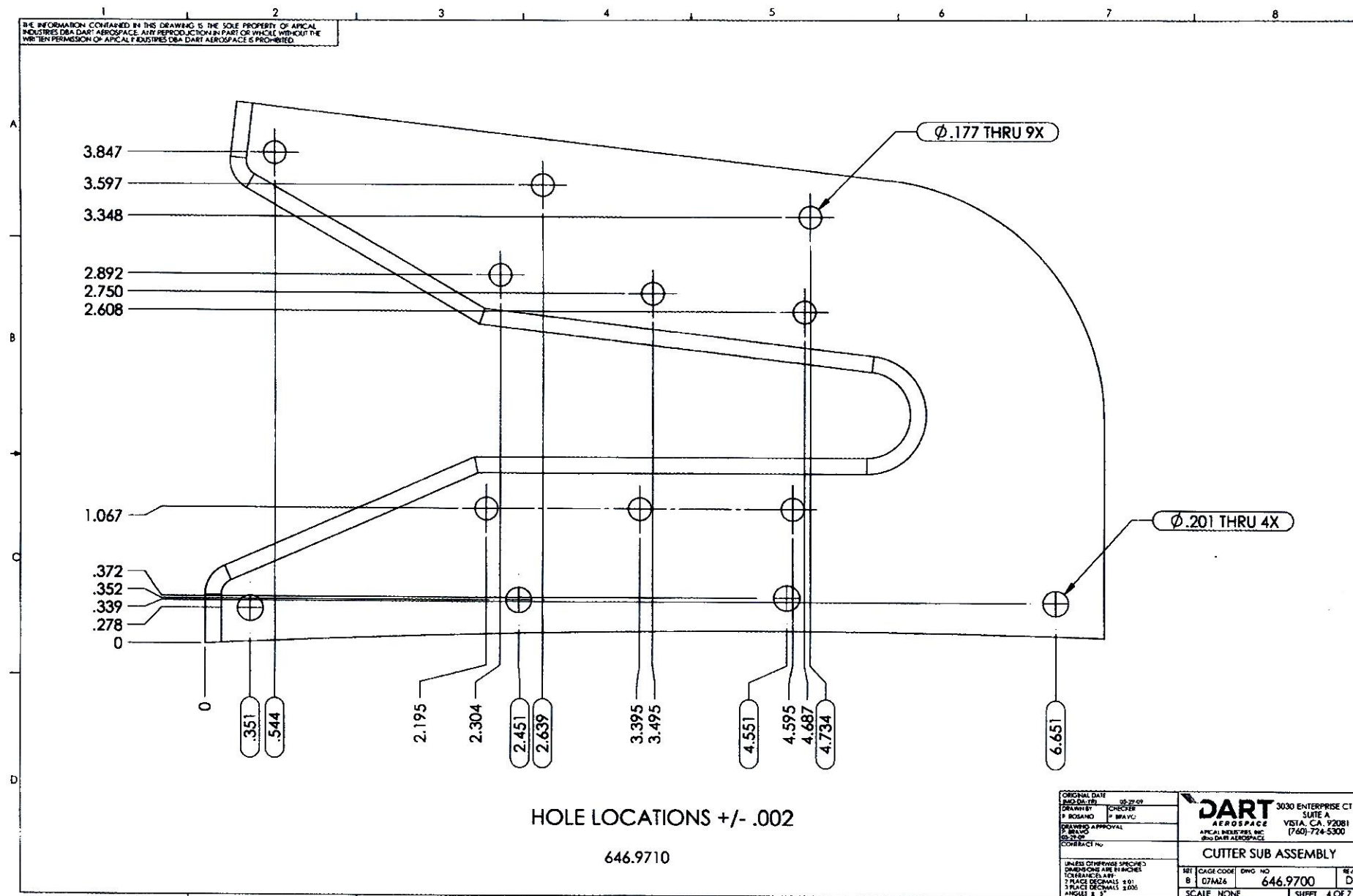


SECTION A-A 2/C6

646.9710

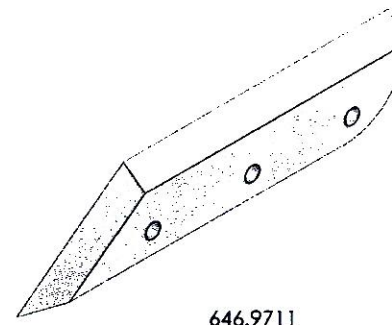
ORIGINAL DATE: 05/20/07		3030 ENTERPRISE CT., SUITE A	
DRAWN BY: CHIEF		VISTA, CA 92081	
BY: ROSANO		(760) 724-5300	
DRAWING APPROVAL:		APICAL INDUSTRIES INC. (DBA DART AEROSPACE)	
DATE: 05/20/07		CUTTER SUB ASSEMBLY	
CONTRACT NO.:		SCALE: NONE	
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. FRACTIONS TO 16THS. DECIMALS TO 3 PLACES. ANGLES: 1/2°		SHEET 3 OF 7	

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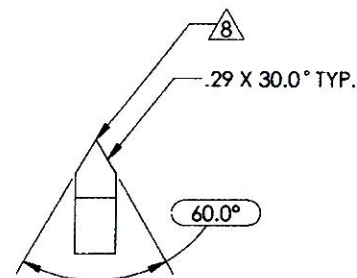
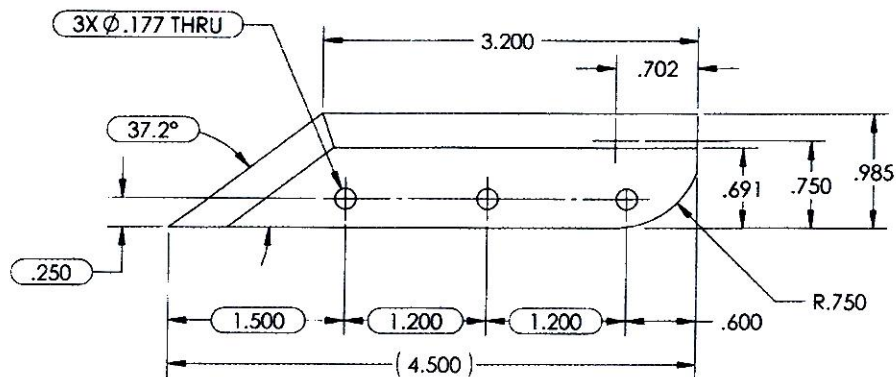


ORIGINAL DATE: 08-29-09		3030 ENTERPRISE CT., SUITE A, VISTA, CA, 92081 (760) 724-5300	
DRAWN BY: P. ROSANO	CHECKED: P. ROSANO	DART AEROSPACE APICAL INDUSTRIES INC. DBA DART AEROSPACE	
DESIGNED BY: P. ROSANO	APPROVED BY: P. ROSANO		
CONTRACT NO.:			
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ± .5°			
REV: B	DATE: 07/26/06	DWG NO: 646.9700	REV: D
SCALE: NONE		SHEET: 4 OF 7	

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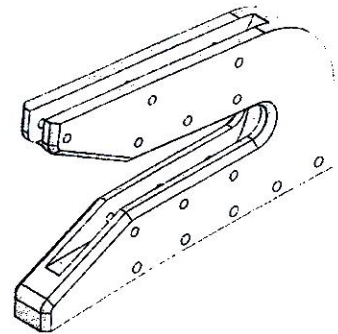
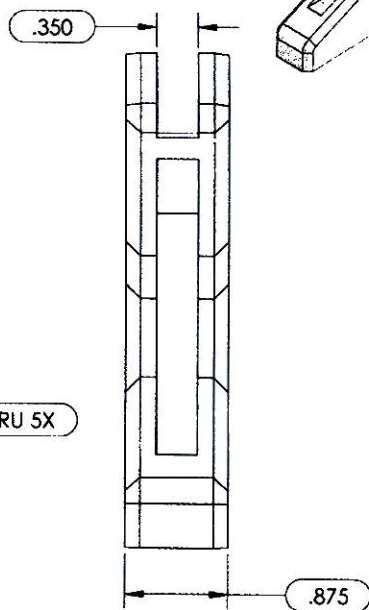
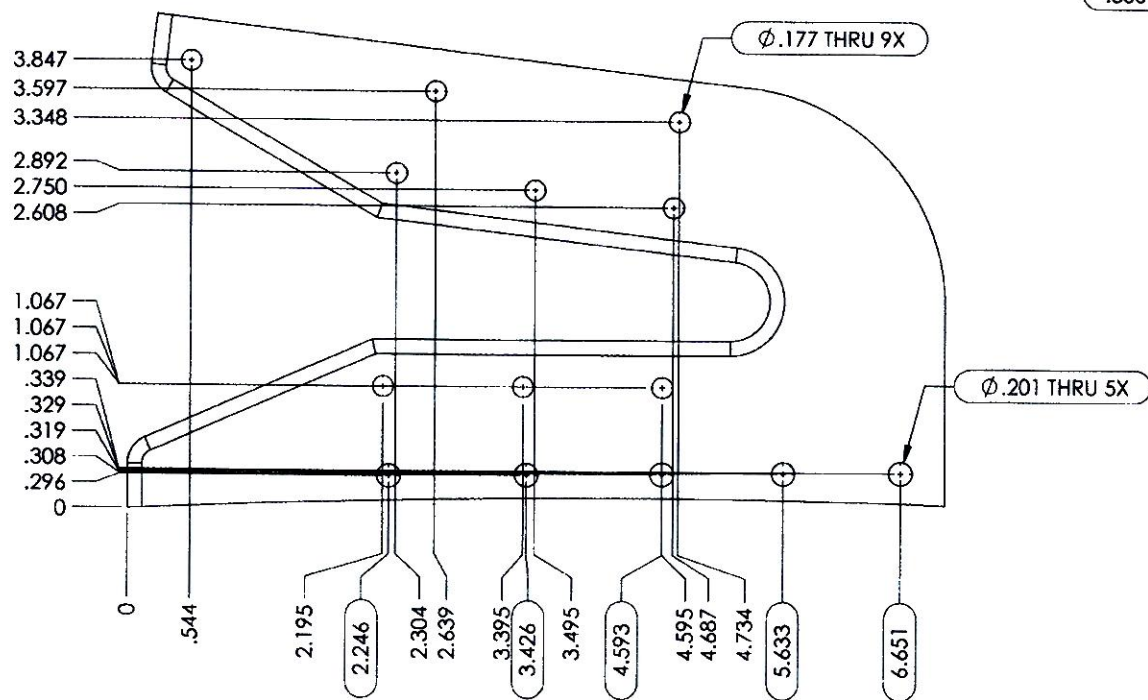
646.9711



646.9711

ORIGINAL DATE: 08-28-08		DART AEROSPACE 3030 ENTERPRISE CT., SUITE A, VISTA, CA 92081 (760)-724-5300	
DRAWN BY: P. BOGARD	CHECKED: P. BOGARD	APCAL INDUSTRIES INC. DBA DART AEROSPACE	
DESIGNED BY: P. BOGARD	APPROVED BY: P. BOGARD		
DRAWING APPROVAL: 08-28-08		CUTTER SUB ASSEMBLY	
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. TOLERANCES ARE: 2 PLACE DECIMALS ±.01; 3 PLACE DECIMALS ±.005; ANGLES ±.5°		1271 LAGE 0001 DWG. NO. 646.9700	REV. D
SCALE: NONE		SHEET 5 OF 7	

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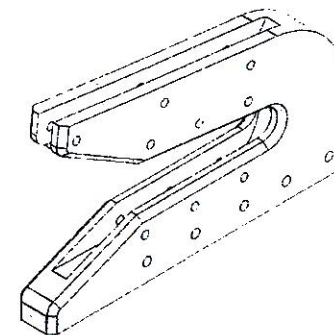


646.9712 $\triangle 9$

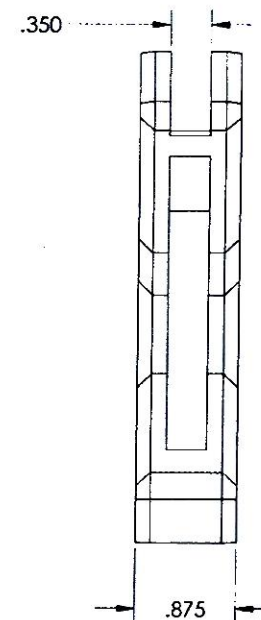
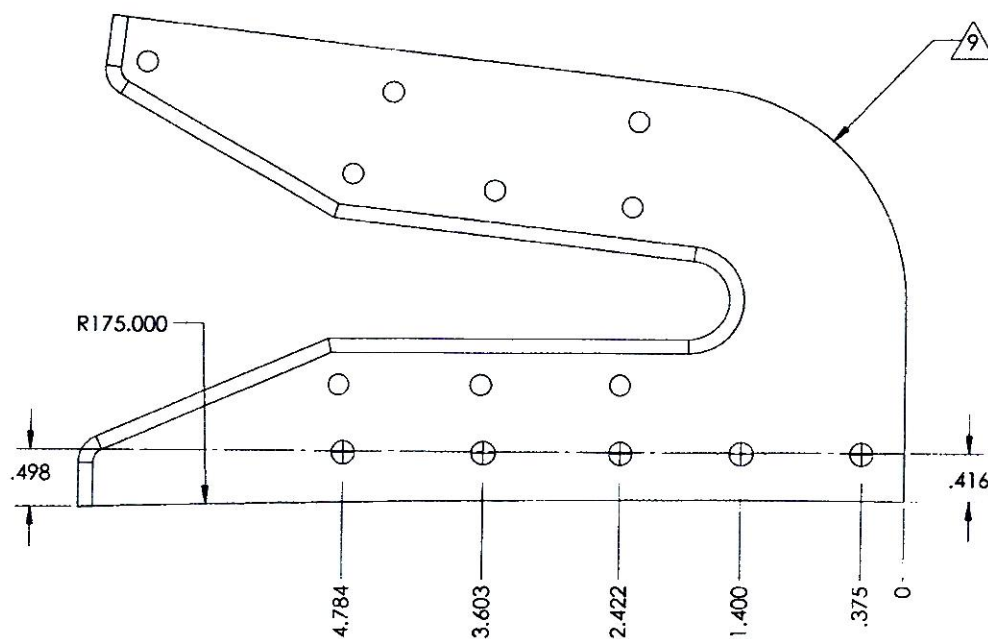
646.9712

ORIGINAL DATE 30-29-09		DART 3030 ENTERPRISE CT., SUITE A	
DRAWN BY R. ROSANO		AEROSPACE VISTA, CA. 92081	
CHECKED BY P. BRAVO		(760) 724-5300	
DRAWING APPROVAL P. BRAVO		APICAL INDUSTRIES, INC.	
DATE 05-29-09		DBA DART AEROSPACE	
CONTRACT NO.		CUTTER SUB ASSEMBLY	
REV	CAGE CODE	DWG. NO.	REV.
B	07M26	646.9700	D
SCALE NONE		1 SHEET 6 OF 7	

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646.9713



ORIGINAL DATE 05-20-09		3030 ENTERPRISE CT. SUITE A VISTA, CA 92081 (760)-724-5300	
DRAWN BY CHECKED BY F. POSA NO. F. BRAYNO		DART AEROSPACE APICAL INDUSTRIES, INC. DBA DART AEROSPACE	
DRAWING APPROVAL BY DATE		CUTTER SUB ASSEMBLY	
CONTRACT NO.		REV D	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS ARE DECIMALS TO 1/16 FRACTIONS TO 1/32 ANGLES IN DEGREES		SCALE NONE SHEET 7 OF 7	



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO34063

Purchase Order Date 10/26/2016
PO Print Date 10/27/2016

Page Number 5 of 9

Order From :

A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE ROAD
ROCKLAND, ON K4K 1T2
CANADA

VC-ATG001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone

613-446-4544

Ship To Contact

Ship To Phone

Ship Via:

Ship Acct:

VENDOR'S TRUCK

Buyer

Customer POID

Customer Tax #

Terms

Currency

FOB

Chantal Lavoie

10127-2607

Net 30

CAD

FCA - (Free Carrier)

Line Total:

\$65.50

12 151651

646.3811 RADIUS
BLOCK REV. N/C

11/9/2016

10.00

\$6.55

\$65.50

Yes

11/9/2016

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-P-23377J TYPE I CLASS N

Line Total:

\$65.50

13 150127

DAS
38
9-89

646.9710 BODY REV. D

11/9/2016

Yes

11/9/2016

10.00

NOV 11 2016

\$14.50

\$145.00

DAS
26
9-89

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-P-23377J TYPE I CLASS N

Line Total:

\$145.00

14 151665

647.0113 STRUT
DOUBLER REV. A

11/9/2016

6.00

\$11.75

\$70.50

Yes

11/9/2016

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-P-23377J TYPE I CLASS N

Note:

10/27/2016



A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE STREET
ROCKLAND, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 912522

Date: 09-Nov-16

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

CHANTAL LAVOIE
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via	
Quantity	Description		
	PLEASE REFERENCE THE PACK LIST NUMBER ON ALL CORRESPONDENCE TO THIS SHIPMENT. IF YOU HAVE ANY QUESTIONS, PLEASE CALL AT (613) 446-4544.		
12 ea	Part: 646.3714 Gusset Hard Anodize, Type III, Class 2 (MIL-A-8625) Primer, MIL-P-23377J, TYPE 1, CLASS N Job: 20317 PO: 34063		Rev: A Line: 10
10 ea	Part: 646.3810 Bracket Hard Anodize, Type III, Class 2 (MIL-A-8625) Primer, MIL-P-23377J, TYPE 1, CLASS N Job: 20318 PO: 34063		Rev: N/C Line: 11
10 ea	Part: 646.3811 Radius Block Hard Anodize, Type III, Class 2 (MIL-A-8625) Primer, MIL-P-23377J, TYPE 1, CLASS N Job: 20319 PO: 34063		Rev: N/C Line: 12
10 ea	Part: 646.9710 Body Hard Anodize, Type III, Class 2 (MIL-A-8625) Primer, MIL-P-23377J, TYPE 1, CLASS N Job: 20320 PO: 34063		Rev: D Line: 13
6 ea	Part: 647.0113 Strut Doubler Hard Anodize, Type III, Class 2 (MIL-A-8625) Primer, MIL-P-23377J, TYPE 1, CLASS N Job: 20321 PO: 34063		Rev: A Line: 14
8	Part: 647.0210		Rev: N/C



A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE STREET
ROCKLAND, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 912522

Date: 09-Nov-16

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

CHANTAL LAVOIE
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms	Ship Via
Quantity	Description
DATE: <u>9/11/16</u>	
CERTIFIED SIGNATURE: <u>[Signature]</u>	
RECEIVER SIGNATURE: <u>[Signature]</u> NOV 11 2016	
Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of receipt.	
CERTIFICATE OF CONFORMANCE	
A.T.G. INDUSTRIES INC. CERTIFIES THAT ALL ITEMS IN THIS SHIPMENT CONFORM TO REQUIREMENTS.	
MADE IN CANADA.	
DAS 38 9-89	